

ACTIVITY REPORT by H. Fred Hinman, District Engineer

Rico Argentine Mining Company, Dolores County

*Summary*  
On August 11, 1974, at approximately 6:00 P.M., I received a call from Fred Matter informing me that there had been a fish kill on the Dolores River in the area of the Town of Rico. After talking to Fred on how we should do this, a consideration for the time to travel for the area was brought into effect and I was to contact Game and Fish and see if maybe we could fly over. I contacted Lloyd Hazzard and William Weiler of the Division of Wildlife and we talked over what could be done before darkness fell. It was felt that we could accomplish nothing by traveling to Dolores. It was decided that we would travel the first thing the next morning.

On August 12, 1974, along with Mr. William Weiler of the Department of Wildlife, we traveled to Rico and arrived at about 9:30 A.M. at Rico Argentine Mining Company, and there met with the general manager, Mr. Orville Jahnke. I asked him if he had had any kind of a spill. He said that on August 11, 1974, he had arrived at the plant at approximately 9:30 A.M. and had found that there had been a sloughing of the bank in a concentrated area, but at that time there was no liquid from the piles being discharged to the river. It was running back into the circuit as usual, but there was evidence that at the time of the bank sloughing there had been a discharge of <sup>some liquid</sup> liquor into the river. This had to happen some time before 9:30 A.M. Mr. Jahnke showed us the system that he was operating. It is apparent to me that a lot of special precautions were taken, but a sloughing in the bank was not anticipated and the outer edge of the tailings pile was approximately 18" high and not high enough to contain the liquor that blew out. This edge should have been approximately 3' to contain the liquid. Mr. Jahnke had a crew busily working on the replacement of this bank. He informed me that he was going to work on a two shift basis to raise this bank approximately three to four feet above the floor level of the tailings pile so that a blow-out could

not possibly occur. He also had a Caterpillar working on the acid leachings pile, taking one side of it out and pushing it further on down the pile away from the river area. He intends to replace the crushed mine tailings with regular mine tailings which are much coarser, thus not permitting the pile to build up a high hydrostatic head of <sup>tailings</sup> ~~Cy~~ and cause another blow-out on the river side of the acid leaching facility. Mr. Jahnke also informed me that he could not believe that the blow-out occurred in the area that it did. There must have been some strange or different type of strata in this area because he has a hydrostatic head on the pile of seven feet from north side to the south side and also three feet from the river side downhill to the hillside. If a blow-out occurred in any one of these directions, the liquor would have been contained.

The process of this unit is thus. Mine tailings are trucked to the area, crushed, and put into a pile that has been underlined with butyl rubber. This material pile is then sprayed with a cyanide solution, which leaches the silver from the old ore pile. This <sup>silver</sup> liquor is then directed to a pond and run through a process to remove the silver from it. The Rico Argentine Mining Company had a small experimental plot in the area during 1973, but it did not start the big operation until approximately last July or around the first of August. Mr. Jahnke had informed me they had been sprinkling the pile approximately two weeks and had not yet put their silver extraction system into operation. They were just pumping the cyanide <sup>liquor</sup> through the system. He also informed me that it takes a while for the silver to build up in the cyanide solution. It should also be noted that the pH of this system will probably be between 10 and 11. It isn't an acid system. It is a system of high alkalinity, thus eliminating any formation of a cyanide gas.

Between Mr. William Weiler and myself we took many pictures of the area where the pile had slumped in. A "Cat" had already been working in the area where the blow-out occurred. The lower area, as the pictures will show, had not been disturbed too much. I asked Mr. Jahnke how come he did not call and report that he had had a spill. He said that he was too worried about a further break and further damage to the river from the caving of the system.

From Rico Argentine we went to the City of Rico and contacted the Deputy Sheriff of Dolores County, Mr. Wayne Shepereck, who had reported the spill to Bob Hampton, of the Montezuma County Sheriff's Department, who reported it to us through the Colorado Department of Agriculture representative, Dennis Burchett. Mr. Shepereck had been notified at approximately 10 A.M. on August 11, 1974, that the fish were dying in the river. He immediately called the Montezuma County Sheriff's Department and went to the ball park below Rico and took water samples and fish samples. He said at that time there were many fish swimming with their heads above water. All fish taken were taken with their mouths open, which indicated they were suffocating. Mr. Shepereck also talked to some people who were camped at this ball park. They had been fishing at approximately 7:30 A.M. August 11, 1974, and noticed that a large group of fish were madly rushing down the stream and very soon after this they started noticing some fish coming to the surface with their mouths open. This again pinpoints our time of spill to approximately 7 to 8 o'clock in the morning on August 11, 1974, which coincides with Mr. Jahnke's information.

At this time Mr. Fred Thomas, the Montezuma - Dolores Counties Sanitarian, arrived to meet us. He then informed me that he had closed the water intakes at Dolores and at Cortez approximately at 11 o'clock Sunday evening. I informed Mr. Thomas that I had talked with Mr. Foster at the Dolores Fish Hatchery, operated by the Division of Wildlife, and they had no fish dying or in noticeable agony; therefore, it was apparent that the cyanide had or was not going to reach the water intakes of Dolores or Cortez in noticeable concentrations.

We did some quick calculations on the known flow of the Dolores River and assumed that the "slug" had long passed Dolores and Cortez raw water intakes according to the miles per hour of the river. I then called the City of Cortez and the City of Dolores and told them there was no further danger from the cyanide due to the fact that we had not or were not getting any discomfort out of the fish at Dolores Hatchery or any reported kill in that area.

Mr. Weiler and myself then continued to inspect the stream insect life at one mile intervals from Rico Argentine downstream. We found insect life 100 feet below Rico Argentine, a few mayflies were still alive; therefore, not all the stream insects were killed even right below this spill. We continued to observe the stream at these intervals, checking stream biota, pockets of dead insects and dead fish. We observed these fish and insects continually down the river until we reached the bridge at Bear Creek, approximately 15 miles below Rico. At this bridge we noted no dead insects and no dead fish, indicating the cyanide had apparently oxidized and transformed into a harmless chemical. We continued to the City of Dolores and there I contacted Bob Hampton of the Montezuma County Sheriff's Department, who had taken the samples from Mr. Shepereck for safe keeping. Mr. Shepereck took two stream samples at the ball park at 11 A.M., and other stream samples up and downstream between 11 P.M. and 12 P.M., August 11, 1974. The Montezuma County Sheriff's Department sent the water samples by Deputy Robert C. McKusick to me for my possession. I took the samples to the Colorado Department of Wildlife office in Montrose, packaged them and took them to Frontier Airlines freight office at 7:30 P.M., August 12, 1974. The samples were placed on Frontier Flight 677 from Montrose to Denver.

H. Fred Hinman, District Engineer

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